

December 10, 1987

Reference No. 626

Mr. Frank Langone
Environmental Protection Agency
26 Federal Plaza
New York, New York
U.S.A. 10278

Mr. James Bologna
Bureau of Hazardous Waste Technology
Division of Hazardous Substances Regulation
50 Wolf Road
Albany, New York
U.S.A. 12233

Dear Messrs. Langone and Bologna:

Re: Buffalo Avenue Plant - Corrective Action

Recently, in the context of our discussions on the proposed Corrective Action Module for Occidental Chemical Corporation's (OCC) Buffalo Avenue Plant, an issue was raised as to the potential for exfiltration of water from various sewer lines located at the Plant.

As consultant to OCC, I have had an opportunity to study the sewer system and groundwater hydrogeology at the Plant for a number of years. During that time, extensive data on the conditions at the Plant have been developed and summarized in numerous reports which were previously transmitted to the appropriate governmental agencies.

Based on my study of the conditions at the Plant, it is my conclusion that the gravity sewer system (all sewers except a portion of 003 Outfall) is located below the water table at the site and, as such, there is no potential for exfiltration from the sewer lines. In fact, the studies reveal that the influence of the sewers on groundwater at the site is through infiltration into the lines, rather than through exfiltration.

I have prepared a list of the various reports and maps which I have reviewed in the past and which form the basis for my conclusion. This listing is attached as Table 1.

During your review of these documents, I would call your attention to the following:

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"Reference 3

"The Niagara Plant Comprehensive Water Management Study," completed in September 1980, concluded that:

"Groundwater flow in the overburden is to the sewer network which criss-crosses over the Plant."

(Reference (3)(b)-pg. 7-118)

In response to a DEC inquiry about this conclusion, the technical basis of this view was discussed in greater detail in Reference (3)(e)(pg. 30).

"Reference 4

The four-volume compendium of data from the Plant prepared in 1984 again drew a similar conclusion, i.e. that the sewer system affected the groundwater flow through infiltration, not exfiltration.

Reference (4)(a) noted:

"Generally, the shallow groundwater flow regimes are controlled by the presence of underground sewers, utilities and structures. Major influencing structures include the power conduits and River intake structures."

The above condition was reflected in the depiction of groundwater contours presented on Plate 9 of Reference (3)(d).

Finally, my general conclusions are graphically depicted in the following enclosed documents:

- (1) Isopach map of the unsaturated overburden showing that the water table is near the land surface.
- (2) Figure 1 - "Infiltration Potential" - showing the influence of a sewer line which is installed below the groundwater water table.

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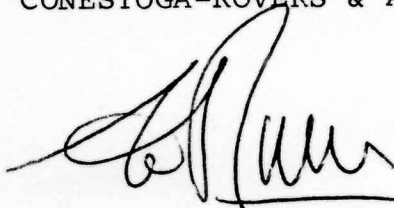
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Please feel free to contact me if you have any further questions.

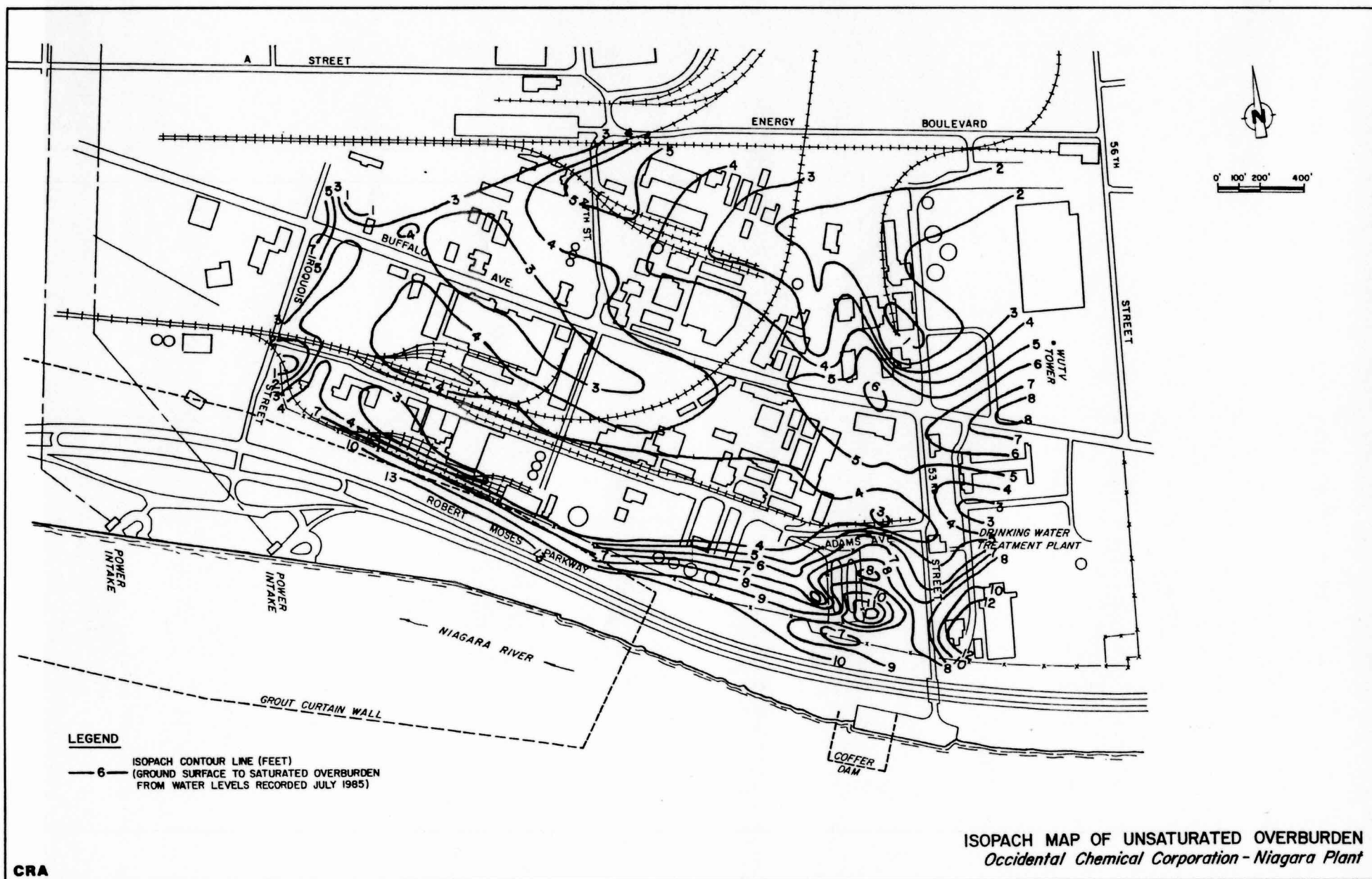
Best regards,

CONESTOGA-ROVERS & ASSOCIATES

A handwritten signature in dark ink, appearing to read 'F. Rovers', with a stylized flourish at the end.

Frank A. Rovers, P. Eng.

FAR/pmck
Encl.



CRA

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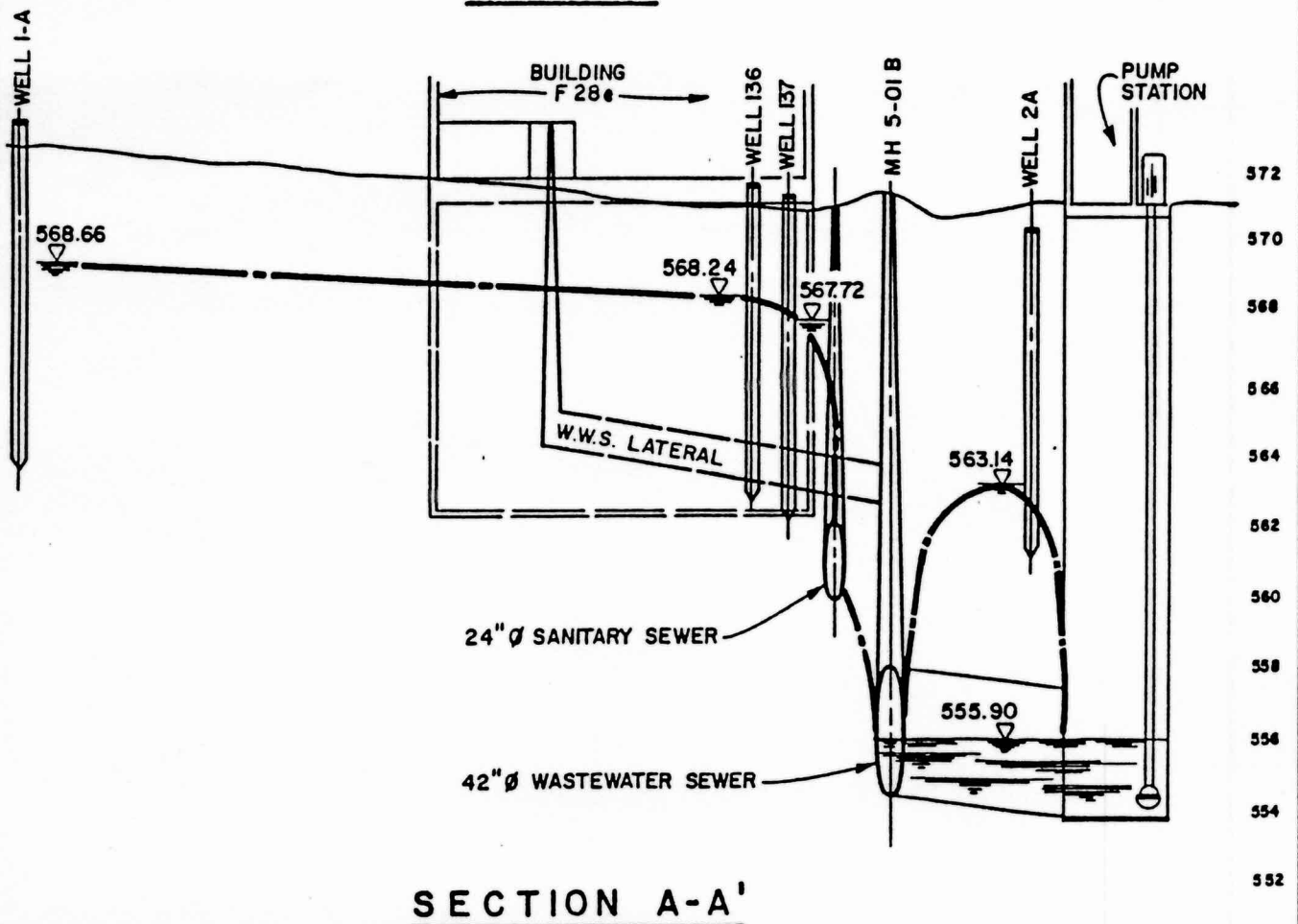
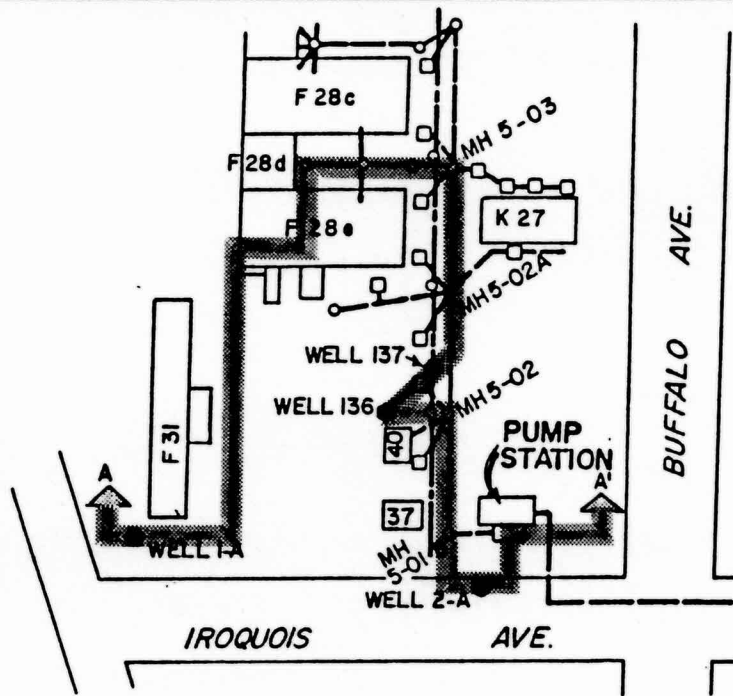


figure 1
INFILTRATION POTENTIAL
Occidental Chemical Corporation

TABLE 1

NIAGARA PLANT REPORTS AND MAPS

- (1) Data Base - Buffalo Avenue Plant - Surface Characteristics, June 1986
- (2) Data Base - Buffalo Avenue Plant Perimeter Plan Profiles
 - Surface Characteristics
 - Sanitary Sewers
 - Stormwater Outfall Sewers
 - Major Hydraulic Influences, July 1986
- (3) (a) Volume 1 - Executive Summary - Report on Wastewater Outfall Sewers - Niagara Plant Comprehensive Water Management Study, September 22, 1980
- (b) Volume 2 - Field Study - Report on Wastewater Outfall Sewers - Niagara Plant Comprehensive Water Management Study, September 22, 1980
- (c) Volume III - Plates - Report on Wastewater Outfall Sewers - Niagara Plant Comprehensive Water Management Study - September 22, 1980
- (d) (i) Volume IV - Chemical Loading & Groundwater Quality - Niagara Plant Comprehensive Water Management Study - July 1981
- iii) Volume IV - Chemical Loading & Groundwater Quality - Niagara Plant Comprehensive Water Management Study - July 1981
- (e) Response to NYSDEC Reply Letter Dated December 29, 1980 re: Vol. I, II, III, IV Niagara Plant Comprehensive Water Management Study, January 15, 1981
- (4) (a) Historical Data Base - Buffalo Avenue Plant Volume I - Text, August 1, 1984
- (b) Historical Data Base - Buffalo Avenue Plant Volume II - Appendices, August 1, 1984
- (c) Historical Data Base - Buffalo Avenue Plant Volume III - Chemical Concentration Data, August 1, 1984
- (d) Historical Data Base - Buffalo Avenue Plant Volume IV - Plates, August 1, 1984
- (5) Chlorocarbon Source Investigation Program - Niagara Plant, March 30, 1979

- (6) PBC & TCT Survey - Niagara Falls Facility SPDES No. 0003336, April 1980
- (7) (a) Plan of Best Available Technology and Best Management Practice - Niagara Plant SPDES NO. 0003336, November 1981
 - (b) Response to NYSDEC Comments of March 26, 1982 re: Plan of Best Available Technology and Best Management Practice, November 1981 - June 1982
- (8) Niagara Plant Engineering Report SPDES Permit No. 0003336, December 15, 1984
- (9) Statistical Analysis - SPDES Data Niagara Plant - December 2, 1983
- (10) SPDES Permit - Niagara Plant - Evaluation of Outfall Chemical Loadings, January 1981 through July 1983 - September 1983
- (11) Plans locating all utilities on Niagara Plant